A COMMUNITY GUIDE TO COMPOSTING LEAVES AND YARD TRIMMINGS IN MAINE

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Maine State Planning Office, Waste Management and Recycling Program
Maine Department of Environmental Protection, Bureau of Remediation and Waste Management

BoothBay Regional Refuse Disposal District

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I. Introduction

Maine communities, large or small, urban, suburban, or rural, may wish to take a look at composting leaf and yard trimmings as a waste-to-resource management tool, either as an alternative to their current system, or as a new service to their residents and businesses.

Composting replicates and accelerates the natural process by which organic materials, such as leaves and yard trimmings, are converted into a nutrient rich, humus-like product for distribution as a soil amendment.

A. Why do it ?

1. Lower Costs

Composting is a relatively inexpensive method for managing leaf and yard trimmings as compared to the cost of disposing the same materials at either landfills or incinerators. In addition, managing yard waste locally benefits us all by extending the limited life of in-state landfills, and by making the best use of expensive in -state incinerator capacity and technology.

2. Environmental Benefits

Diverting leaves and yard trimmings to local composting sites reduces the potential for water and air pollution from landfills, and reduces air emissions, residue, and incinerator ash that must be landfilled as a special waste. The use of compost can improve soil quality, reduce water consumption in the landscape, and reduce non-point source pollution from the overuse of chemical fertilizers. In addition, due to public health concerns, most communities have placed bans or strict controls over the open burning of leaves and yard trimmings.

3. Improve recycling rates and help meet reasonable progress goals

Municipal compost programs are credited three ways under Maine's current recycling reporting requirements: by the creation of the program, by the tons composted, and by instituting a ban on the disposal of leaves and yard trimmings. Nationwide, yard trimmings account for some 28 million tons or 13.4% of the MSW stream.

An average cubic yard of uncompacted leaves weighs between 200 and 250 pounds, a cubic yard of grass clippings, 350-450 lbs. While generation rates may vary widely from town to town, these figures show the potential impact of a compost program on disposal tonnage.

Many Maine towns that instituted bans on leaf and yard trimmings from MSW disposal have put a municipal compost program in place as a reasonable alternative.

4. Improve public relations and education

Informing and educating citizens of their opportunity to participate in a municipal compost program increases their overall waste awareness and potential participation in other recycling efforts.

A properly managed and promoted community compost program is a readily accessible demonstration of "waste to resources" that positively engages the residents and businesses with tangible benefits back to the community. Do not underestimate the public relations value of free compost.

5. Make a useful and desirable commodity

Composting turns waste materials into a valuable end product. Citizens, local businesses and public works departments can be both the suppliers of the feed stock and the end users of the compost.

B. Why now?

1. Composting has proven a track record throughout the State

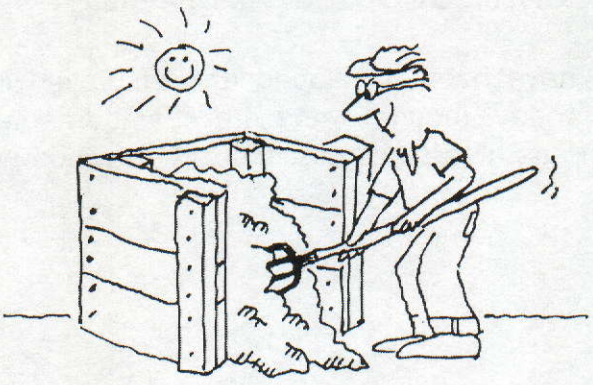
While there is ongoing research to improve methods of composting and to expand the uses of compost, composting has been part of the Maine waste management scene for more than a decade. Composting has been promoted through a variety of grant programs that funded master composting training, home composting education and equipment, pilot and demonstration projects and community level leaf and yard trimming composting operations.

2. Composting has encouraging standing in regulation

In November of 1998, The Maine Department of Environmental Protection published the new Solid Waste Management Rules and Regulations. These provide a clear and consistent framework for environmentally sound compost operations. The application process for a permit by rule for composting leaf and yard trimmings has been simplified and streamlined.

3. Ready access to good technical assistance

In addition to knowledgeable staff at the Maine D.E.P and State Planning Office, Maine is home to two nationally known resources on composting: the **Compost Team** and the **Compost School**. Both programs are cooperative efforts by the Departments of Environmental Protection and Agriculture, the Maine State Planning Office, the Cooperative Extension Service of the University of Maine, and the University of Maine at Orono.



II. The Compost Process

Composting is a biological process in which microorganisms consume organic materials (carbon and nitrogen compounds) and convert them into a nutrient-rich, humus-like product. Although composting can occur without oxygen, the composting presented in this guide is an aerobic process, meaning that the microorganisms require oxygen to live.

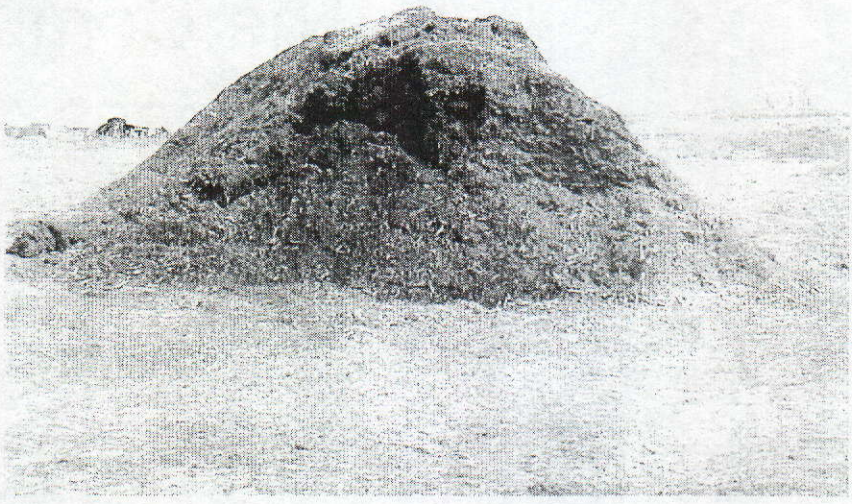
In order for the microbes to survive and multiply within a compost pile, in addition to oxygen, there must be suitable amounts of carbon, nitrogen, and moisture. The moisture serves as the medium in which the microorganisms live, the carbon provides the energy/food source to fuel them, and the nitrogen provides the building blocks for their reproduction. The composting process begins when the appropriate ratios of materials have been mixed together. The physical process of mixing usually provides enough oxygen to initiate the composting.

During the "active composting phase," the microorganisms consume a great deal of oxygen as they feed on the available organic matter. At the same time, they are producing heat, water vapor, and carbon dioxide as they consume and reduce the original volume and mass of the raw ingredients.

A "curing phase" usually follows the active phase. During curing, the microorganisms still feed, but at a slower pace, giving off lower amounts of heat, water vapor, and carbon dioxide. Left undisturbed, the microorganisms will continue to feed until all the organic matter has been consumed. The final product is a nutrient rich soil amendment that provides many benefits including: increased organic matter, enhanced soil structure, drainage and porosity, and water holding capacity. Because of these qualities, compost is a valuable end product for the local home gardener and landscape companies.

A. Four common composting techniques used in Maine

Over the years, many composting systems have been developed and employed in Maine to facilitate the composting process. Today, though, there are 4 fundamental composting systems in use: the static pile, the aerated static pile, the turned windrow, and the in - vessel system.



Lisbon Transfer and Recycling Facility

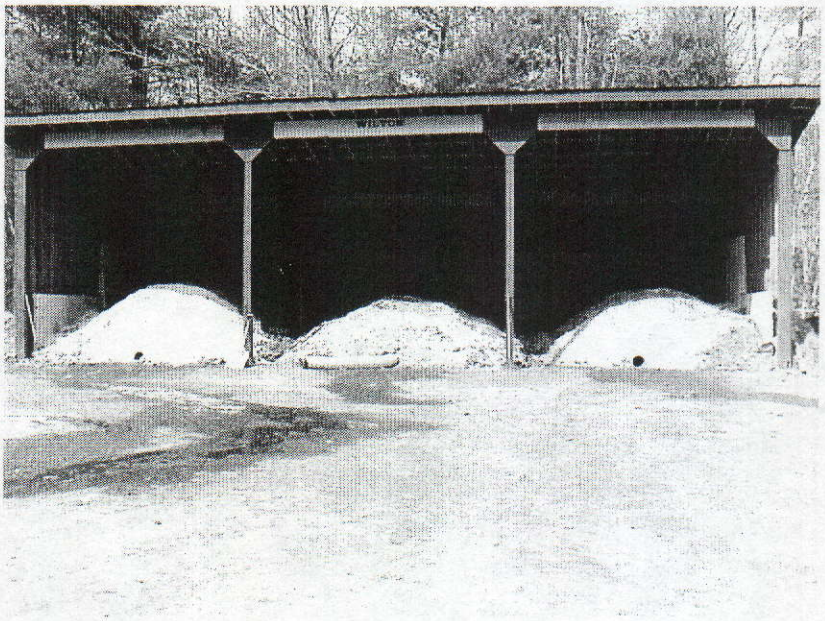
1. The Static Pile. The static pile method involves mixing the compost ingredients together and constructing a pile from the blended material. Subsequent turnings may not be required.

Advantages:

- The least labor/equipment intensive method.
- The preferred method for composting leaves.
- The only equipment needed is a tractor with a bucket or a front end loader(or a very strong back!)
- The pile may be turned up to 4 times a year but will usually compost without any further management.

Drawbacks:

- The composting usually happens very slowly due to the steady reduction in the amount of oxygen available throughout the pile.



Wilton Residuals Compost Facility

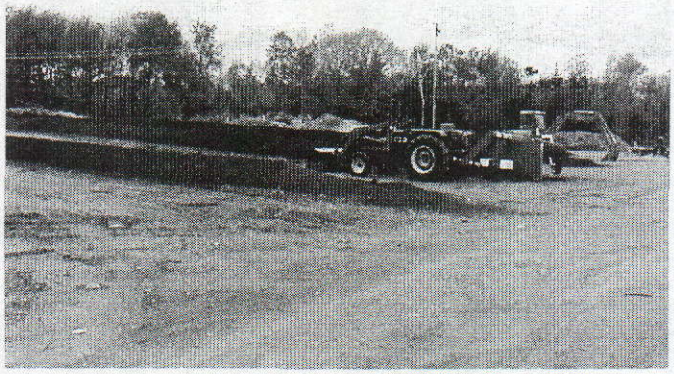
2. Aerated Static Pile. This system involves building a static pile on top of an aeration system, either passive (usually pipes with holes) or forced air, and then leaving the material without subsequent turning until the active phase of the compost process is completed. However, during this phase air is passively drawn or forced through the pile with fans or blowers.

Advantages:

- This low tech approach requires very little capital investment or accessory equipment and as a result, has been widely used for manure and municipal sewage residual composting efforts.

Drawbacks:

- Because there can be no mechanical turning of the pile once it is placed on the aeration system, a thorough mix of all materials must be achieved at the outset of the pile formation. Care must be taken to achieve a homogenous blend.
- Care must be taken in the layout of the aeration system to allow for the free exchange of air or else odors may occur.



Land & Sea Compost, Rockport

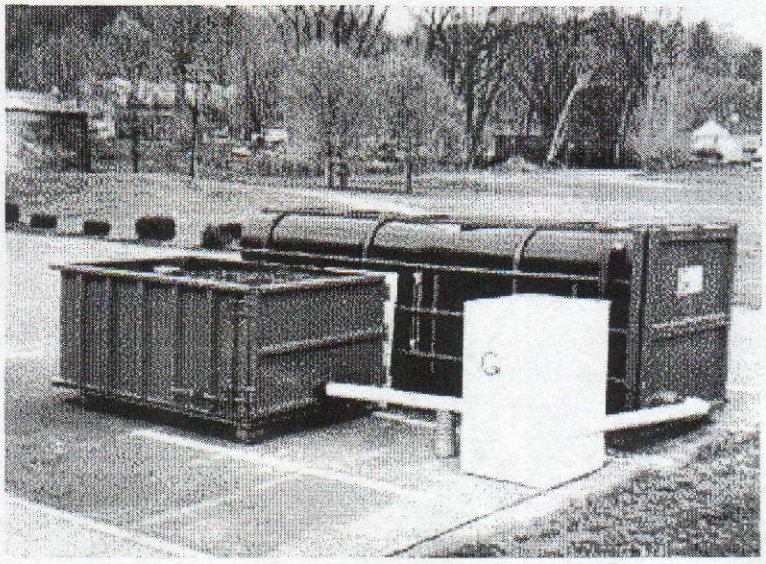
3. Turned Windrow System. This is the preferred method for most on-farm composting activities. It would work equally well for municipal operations with sufficient space and resources.
Typically, leaves and yard trimmings are placed down in layers in long piles (windrows) and mixed using a mechanical windrow turner. Windrows are then turned as needed with the same windrow turner. A front end loader can be substituted to mix and turn the windrows though care must be taken to achieve a good level of mixing. A front end loader will require more time than a windrow turner.

Advantages:

- The windrow system requires the least amount of time for the composting to occur and allows for a large volume of material to be turned in a short length of time.
- Each subsequent turn further blends the compost ingredients, releases trapped carbon dioxide and water vapor, redistributes air spaces within the row, and also aides in the physical breakdown of the materials. This results in a very uniform product.

Drawbacks:

- This method requires more intensive management and more space than the static pile/ aerated pile methods.
- Pile temperature must be carefully monitored so that the row will be turned at the appropriate time to ensure successful composting.



Green Mountain Systems

4. In-Vessel System. As the name denotes, in - vessel composting occurs within a closed system. Usually this means within a building or a container. All of the receiving, mixing, and composting activities are enclosed, and exhaust gases are collected and processed through a filter. Any leachate generated during composting is collected and recirculated back into the process.
Most in - vessel systems combine forced air and a form of mechanical mixing or agitation.

Advantages:

- The immediate benefit of in-vessel systems is the rapid production of a well decomposed product without any concern for odors or leachate generation.

Drawbacks:

- The initial capital investment can be prohibitive.
- Such systems use complex machinery which requires a high level of technical expertise to operate and maintain.

III. Getting Started

This section describes the process for implementing your community composting program. It is designed to provide readers with a quick and easy reference to the tools and information needed to site and develop a successful leaf and yard trimmings compost facility.

The sequence and scope of the following tasks may vary from community to community. In the long term, all programs should have flexibility built into their designs to accommodate future changes in community goals, program resources, and other unforeseen circumstances. In the short term, your daily operations need to be monitored so that they can be quickly modified as necessary.

A. Who will do it?

The first task is to identify the person or persons who will be responsible for gathering the necessary information so that informed decisions can be made at each step along the way. Their duties will include:

- Developing information to provide to the local media and for public education: to create recognition, build public support and awareness, and to answer questions.
- Identifying the end users for the product to make sure that the finished compost will be distributed in a timely fashion.
- Reviewing the potential site or sites to see if they meet the ME DEP site requirements.
- Reviewing all available community resources.
- Setting the goals of the project in terms of the needs and expectations of the community.
- Contact D.E.P. Staff for pre-application permit meeting to review rules and regulations.
- Making sure that the community's goals, the available resources, and the state regulatory requirements are compatible with the potential site.

B. Education and Promotion

Begin the compost project with a public education program and adopt the approach that it will be ongoing. The goal of the education program is to create awareness of the project and build public support.

A good education program, one that creates and sustains community enthusiasm and support, can counteract limited community resources. Conversely, the best equipped and funded operation can be derailed by a poor education effort.

1. Program Outline:

- Be up front and answer people's questions and concerns. Address such potential issues as odor, noise, and contamination;
- Talk about composting and compost; how it will be done, what the material can be used for, and how it will be available once it is ready;
- Talk about the cost of the program;
- State what you hope and expect the compost project will accomplish for the community;
- Let the public know what will be expected of them well ahead of program start up;
- Supply the details: when it will start, the hours of operation, where it is, what will be accepted and in what form (bags, loose, etc.), so that to the greatest extent possible, the public will know exactly what to expect and what to do before they get to the gate or set their material out by the curb.

2. Suggested Steps:

- To establish their support, make sure you educate your board of directors, solid waste committee, selectmen, council, etc.
- Ask to speak at appropriate public meetings, community gatherings and clubs;
- Create a logo or a slogan, something recognizable that can be repeated on signs, flyers, ads, etc.;
- Sponsor spring and/or fall home or backyard composting workshops to raise awareness and familiarize the residents with the process and its benefits;
- Suggest an article or articles for the local paper, consider the local cable access channel for an interview or the local radio;
- When the program is close to start up, consider an ad in the local paper, print and distribute flyers, and put a sign up at the entrance to the facility.

3. The outcomes of an education campaign include:

- an increase in public support;
- good quality feedstock;
- potential opposition dissolved;
- contact with the markets for the finished compost .

C. SELECTING AND DEVELOPING A COMPOST SITE

Siting and developing a compost facility are critical steps that can determine the success or failure of a community compost program.

1. SITING

a. Projecting Volume. Maximum volume is not only a function of the total amount of available space on site to accommodate the several stages of the compost process, it is also a function of the amount of feedstocks you can receive and correctly manage over a given time period.

Therefore, the first issue to be decided is who will bring the leaves and yard trimmings to the facility. For example, if every leaf and grass clipping generated by your community is coming to your facility in town trucks and is collected by town employees, you can control the training, scheduling, operations and procedures. Now picture the same facility with the same amount and kind of materials being delivered by several hundred home owners and landscape companies.

The level of access will determine the volume, the flow, and the characteristics of the raw material the compost facility can expect to receive in a given time period. An accurate projection of the volume is essential to the siting process.

The level of access will also decide:

- traffic flow,
- hours of operation;
- the amount of space that will have to be devoted to vehicle parking and maneuvering; and
- the number of personnel needed to staff the operations in order to maintain quality control over the incoming raw materials and instruct the public.

There must be a balance between convenience and accessibility and control over the quality of the incoming material.

Use the public education process to answer the question of access. Raise the issue in the media, at public meetings and gatherings, and in one-on-one conversations with such potential user groups as: public works department personnel, public and private institutions and facilities, landscape companies, garden clubs and homeowners.

There are many variables that can effect the volume of leaves and yard trimmings your community will produce, including: acres of lawn, number of mature trees, the level of backyard composting, disposal bans, and the number of landscape contractors with their own compost operations. Because volume numbers have not been widely

recorded, we strongly encourage you to contact one or more of the communities listed in Appendix C (Compost Sites); visit the site or sites and talk one on one with the program operators. The best course of action is to plan for the maximum allowed by the site, the permit by rule regulations, and your community's resources.

Glowood Farms, Yarmouth

b. Resources. The next step is to match the community's available resources with the level of expected use. Resources generally include: funds, personnel, equipment, space, and expertise. It also includes potential volunteers to help spread the word and educate and staff the facility, as well as the use of equipment donated or shared between departments. Try to piggyback the compost program onto existing town infrastructure where possible to avoid new costs. For example, many towns have front end loaders that can be shared between departments.

Develop a capital budget and a preliminary operations budget to help match resources to program expectations.

A capital budget may include:
Land lease or purchase, any engineering or consulting costs, equipment lease or purchase and installation, construction costs of the pad, drainage ditches, berms , or other surface water controls, access roads, any fencing, signs or landscaping, and all other costs associated with meeting the regulatory requirements as outlined in the sections to follow, plus any financing costs.

The operations costs include, but may not be limited to:
maintaining the site, operating and maintaining the equipment, renting equipment, staffing, including management and hourly labor, possible feedstock and product testing, education and promotion, reporting and record keeping.

Hourly staffing needs should cover:
handling all the incoming material according to the procedures as outlined in the regulations, maintaining quality control, directing the deposit of compost feedstocks, directing the public and answering their questions, attending to the compost, and maintaining the site and equipment. A percentage of any management time should be included in the staffing costs.

Labor overhead can include:
overtime, sick and vacation time, social security, unemployment insurance, workers compensation, any health and life benefits, uniforms, first aid, personal protective gear, and office supplies.

If cost effectiveness is a concern or goal of the program, staff should be trained in recording their time, any equipment time, and the amount of incoming materials. This information will help you arrive at a cost per yard. Converted to pounds or tons, that figure can be used to compare composting to the costs of other kinds of MSW operations.

Good records highlight the financial benefits of your program and may answer any potential questions as to its cost effectiveness. While a pile of cured compost is there for the people to see, the cost savings it represents may be invisible without written records.

As you are considering a site, keep in mind that it must meet regulatory review as well as be compatible to your community's expectations and resources.

IV. The Regulations

In Maine, leaf and yard trimming composting activities are regulated under the provisions of Maine Solid Waste Regulations, Chapter 409, "Processing Facilities", Section 8-*Permit-By-Rule Composting Of Wood, Leaf And Yard Wastes*. Each activity requires a permit which may be obtained through any of the Department of Environmental Protection's regional offices by contacting the appropriate staff person (A complete reference list of Department licensing staff phone numbers and regional office locations appears at the end of this document). **The following section lists the minimum siting requirements and standards as excerpted from Chapter 409, Section 8:**

A. Applicability. The permit-by-rule licensing provisions of this section shall apply to owners or operators of facilities that compost type IA residuals and grass clippings and that meet all of the standards of this section. Failure to meet any of these standards will require formal application to the Department for a license to develop and operate the solid waste processing facility under sections 2-4 or section 9. The Department assumes that the processing of type IA residuals and grass clippings in strict conformity with these permit-by-rule provisions will meet the standards of Chapter 400, section 4. Facilities licensed under this section are exempt from the requirements of Chapter 400, section 9. No variances to the requirements of this section may be granted.

NOTE: See Chapter 400, section 1 for a full definition of residual types. Type IA residuals are leaf, vegetative and other residuals with a **C:N** ratio of greater than 25:1 See appendix 409.A for a list of typical C:N ratios for various residuals.

B. Standards.

(1) The composting facility may only receive type IA residuals and grass clippings. It may not accept painted wood, treated wood, plywood, chipboard, plastic, wood with fasteners, nails, glue, adhesives, resins, paint or coatings, or wood that is otherwise contaminated.

(2) The total waste handling area may not exceed three (3) acres and on-site storage areas may not exceed one (1) acre. Individual storage piles may not exceed 10,000 square feet.

(3) Setback Distances: At the time a complete permit-by-rule notification is submitted to the Department, proposed storage, processing, composting, or curing of any regulated residual may not lie within:

(a) 500 feet of any water supply spring;

(b) 500 feet of any water supply well and any residence, unless owned by the site operator or owner;

(c) 100 feet of any protected natural resource;

(d) In, on or over a protected natural resource, or on land adjacent to the following areas, without first obtaining a permit pursuant to 38 M.R.S.A. Section 480-A et seq.:

(i) a coastal wetland, great pond, river, stream or brook, or significant wildlife habitat contained within a freshwater wetland; or

(ii) freshwater wetlands consisting of or containing:

a. under normal circumstances, at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water, except for artificial ponds or impoundments; or

b. peatlands dominated by shrubs, sedges and sphagnum moss;

(e) 100 feet of any property boundary;

(f) 100 feet of the solid waste boundary of an active, inactive, or closed solid waste landfill; and

(g) a 100-year flood plain.

(4) Soils: The applicant may only compost, cure and store residuals on:

(a) Soils that a Maine certified soil scientist has determined are moderately well drained to well drained, as classified by the Natural Resources Conservation Service, and that are at least 24 inches above the seasonal high water table, bedrock, and sand or gravel lenses;

(b) A pad constructed with the top at least 2 feet above the seasonal high water mark and is either composed of:

(i) 2 feet of glacial till (having between 15 and 35% fines) covered with a 6 inch drainage layer of gravel; or

(ii) soil covered with asphalt or concrete.

(c) A surface determined by a Maine certified soil scientist, soil engineer or other qualified individual as being suitable for the proposed activity, taking into account the other aspects of the facility design; or

(d) On a land area under a permanent, roofed structure.

(5) Drainage: Surface water drainage must be diverted away from processing, composting curing, and storage areas.

(6) Slopes: Compost windrows must be constructed on a pad or surface with a maximum slope of 6%. Where necessary, the working surface for windrows must be constructed to prevent ponding.

(7) The facility must be operated so that it does not contaminate water, land or air from the handling, storage or composting of wood, leaf, and yard wastes.

(8) Inspection and access control: The operator must control unauthorized access to the site and visually inspect incoming residual so that only type IA residuals and grass clippings are deposited at the facility.

(9) Windrow: Incoming type IA residuals must, within one week, be formed into windrow piles 10 feet high by 15 to 20 feet wide at the base, or which otherwise provide for the proper conditions under which aerobic composting may occur. Windrows must run with the slope of the pad such that runoff is not trapped by the windrows.

(10) Grass: Grass clippings must immediately be incorporated, and thoroughly mixed into established windrows at a ratio of no more than one part grass to three parts type IA residuals (1 grass:3 carbonaceous-material) by volume. The composting facility must not accept grass clippings unless there is a sufficient volume of type IA residuals on hand to meet this ratio. Unamended grass may not be stockpiled for any length of time at the site.

(11) Windrow turning: The windrow must be turned at least four times per year. There must be no more than 6 months between any two turnings.

(12) Distribution: Compost must be distributed for use within one year of completion of the compost process, and within three (3) years of receipt of the raw materials for composting.

(13) Fire control: The operator must develop and implement a plan to prevent spontaneous combustion in residual and compost piles at the site.

(14) Annual Report: By January 31st of each year, the operator must submit an annual report covering the previous calendar year. The annual report must contain;

(a) The estimated weight or volume of residuals received at the facility;

(b) The estimated volume or weight of compost distributed from the facility;

(c) The estimated volume or weight of compost stored on site as of December 31st; and

(d) A description of any problems in operations encountered during the year, and steps taken to correct those problems.

(15) Closure: The facility must be closed in a manner that minimizes the need for further maintenance; and so that the closed facility will not pollute any waters of the state, contaminate the ambient air, constitute a hazard to health or welfare, or create a

nuisance. At a minimum, the applicant must remove all wastes and compost from the facility; and broom clean the facility structures and equipment.

C. **Notification Requirements.** At least 18 working days prior to acceptance of type IA residual or grass clippings at the facility for composting, the applicant shall submit to the Department a permit-by-rule notification on a form developed by the Department. This notification must include:

(1) The applicant's name, address, telephone number and contact person.

(2) The appropriate application fee.

(3) Description: A brief description of the proposed project including a description of the residual to be processed.

(4) Title, Right, or Interest: A demonstration of sufficient title, right or interest to property proposed for development, as specified in 06-096 CMR Chapter 2, section 7.

(5) Topographic Map. The most recent full size U.S. Geological Survey topographic map (7 ½ minute series, if available) of the area, showing the location of the proposed facility, and the property boundary.

(6) Flood Plain Map. When the site is within ¼ mile of a 100 year flood plain, the application must include the most recent Federal Emergency Management Agency flood insurance rate map of the area with the location of the facility clearly marked.

(7) Tax Map: A copy of the local tax map marked with the facility location and the names and addresses of abutters marked on it. The map must indicate all residences within 500 feet of the waste handling area.

(8) Soil and Pad Design: One of the following:

(a) A certification from a Maine certified soil scientist that the soils where residuals will be composted and cured are moderately well drained to well drained, as classified by the Natural Resources Conservation Service, and that are at least 24 inches above the seasonal high water table, bedrock, and sand or gravel lenses;

(b) A description of the pad or other surface that the residual will be composted and cured on, and which of the standards in section 8.4.B that surface meets; or

(c) A certification from a Maine certified soil scientist, soil engineer or other qualified individual that the surface is suitable for the proposed activity, taking into account the other aspects of the facility design; or

(d) A certification that all composting and curing will be conducted under a permanent, roofed structure.

(9) A fire control plan to prevent spontaneous combustion in residual and compost piles.

V. MAKING COMPOST

A. Setting Up

Once the site has passed initial inspection by the DEP, it is time to begin setting it up. The first consideration involves determining how large a footprint you will need to handle the volumes that you project. Remember, it is a lot easier to fill vacant space than it is to create more space at an already cramped site!

Determining the footprint is generally accomplished by developing a site-layout plan. (See Appendix H for a sample site-layout plan.)

A site layout plan should sub-divide the compost area into designated handling areas, list facility design features, and facilitate materials flow through the process. It will show you how many times the same material will have to be handled and the how long it will take up space in the different management areas on the site.

The following section describes a typical site-layout plan.

- Receiving and Handling Area: Allows for the coordinated delivery and handling of in-coming feedstocks. Problem residuals may be isolated here. Provides operators with their first chance to control odors through good residual management (i.e., receiving putrescible materials, such as manure, on a bed of sawdust or leaves to help absorb leachate) and immediate mixing of grass clippings .

- Amendment Storage Area: Allows delivery and stockpiling of carbonaceous amendment, free from contamination with other feedstock.

- Mixing Area: Allows pre-determined, measured amounts of feedstocks to be accurately and thoroughly mixed, while also providing for odor and leachate control. A thorough, heterogeneous mixture facilitates initiation of the active compost phase.

- Composting Area: This is the point where active composting begins. This is generally the largest portion of the site and should be located centrally to the receiving/handling and mixing areas.

- Curing Area: This area is designed for aging and final maturation of compost piles that have completed the active compost phase. Curing is an essential step in the completion of the compost process, allowing natural progression and die-off of microbial populations.

Waste Bypass Area: Provides a centralized area for collection and storage of "non-compostables" for later disposal. Rejected loads of residuals may be staged here while waiting for pick-up. Common contaminants may include:

- Road grit and sand;
- Litter, coffee cups and lunch bags;
- Rocks, roots, and dirt;
- Large branches, and waste wood;
- Plastic bags, plant containers, and flower pots.

B. THE WORKING SURFACE

Upon determining the footprint of the compost area, you will need to develop a suitable work surface. A flat surface with a 2 to 4% grade allows surface precipitation to quickly move off the pad, which prevents ponding. There has been much discussion regarding the benefits/need of an asphalt or concrete pad over a traditional compact gravel or soil-based pad. Proponents of the asphalt pad claim that it provides an impervious barrier, preventing leachate movement to groundwater. In addition, asphalt and concrete pads are very durable and can withstand years of use with very little maintenance. Soil and gravel pads, on the other hand, are prone to leachate infiltration and associated rutting, needing to be scraped and resurfaced on a yearly basis. For leaf and yard trimming composting, a compacted gravel pad is adequate, as very little leachate is usually generated as a result of composting these feedstocks. However, if you are considering co-composting your leaf and yard trimmings with manure or food discards, you may wish to consider investing in an asphalt or concrete pad to avoid future leachate issues.

Compost facility design should include provisions for site drainage. Every attempt should be made to divert surface run-on (clean water) away from the compost area. This can usually be accomplished using upslope diversion ditches or berms. In areas where surrounding water sheds are significant, stone-lined waterways and catch basins may be employed to intercept and channel surface water. Compost piles may be protected from precipitation by using pile coverings such as polar fleece to help shed excess water. Roofing over the compost operation is an option if the very high cost can be justified by the scale and goals of the program.

Runoff from the compost pad may be intercepted and treated by placing a vegetated "level lip spreader"on the downslope edge of the composting surface (Check with your county Natural Resources Conservation Service office for advice on design and placement of level lip spreaders, or refer to the technical assistance list at the end of this document.)

Facility access roads should also be designed and constructed with site drainage considerations in mind. Run-on from surrounding slopes can be diverted away from the

compost site simply by constructing a perimeter road perpendicular to the surrounding slopes.

C. SITE OPERATIONS AND MANAGEMENT

The general operations of a compost facility can be broken down into six separate steps:

- recipe development;
- feedstock preparation;
- mixing and pile formation;
- turning;
- curing.

1. RECIPE DEVELOPMENT

The first step to beginning any compost effort is to determine what feedstocks are available for use and at what ratios they should be blended together. The easiest way to accomplish this is to develop a compost recipe. As a general rule, for leaf and yard trimmings, a recipe of three parts leaves to one part grass clippings will yield satisfactory results. If manure is added to the mixture, at least two additional parts leaves should be added for each part manure.

Taking recipe development further:
In a more detailed and comprehensive approach, each compost feedstock is representatively sampled and sent to a testing laboratory to be analyzed for:

- %moisture,
- total nitrogen,
- ammonia,
- total carbon,
- volatile solids,
- bulk density,
- pH.

A final mixture (recipe), which optimizes the chances for aerobic, thermophilic composting (sustained temperatures greater than 131 degrees Fahrenheit) is developed.
In order for microbial colonization to occur, a recipe must contain appropriate amounts of carbon (microbial energy source), nitrogen (provides building blocks for microbial replication) and moisture (the medium that the microbes live in). In addition, there must be enough coarseness to the ingredients to promote natural diffusion of air throughout the final mixture. Otherwise, anaerobic conditions producing odors will occur. The following conditions must be met, within the recipe, in order for optimal composting conditions to occur:

- moisture-50 to 60%,
- Carbon to Nitrogen Ratio (C:N)-20:1 to 30:1,

- pH 6.5 to 7.5,
- Bulk Density <1,000 lbs./cubic yard and
- volatile solids >40% dry weight basis.

For assistance in developing individual recipes, please refer to the technical assistance reference list that appears at the end of this document.

2. FEEDSTOCK PREPARATION OPTIONS

Once you have determined your compost recipe, you should consider preparing the feedstocks for the mixing process. The amount of time you invest in initial feedstock preparation directly affects the rate at which your materials will compost. Your goal is to create a feedstock that can be handled easily but will decompose quickly. The first processing step usually involves material sizing through grinding. Grinding feedstocks prior to mixing increases available surface area for microbial contact, provides for a better mixture among ingredients and helps to speed decomposition by initiating the physical breakdown of ingredients. The purchase or lease of a grinder can be a costly investment, but grinding services can be hired in Maine on a per day basis. The charge for this service usually consists of the cost of transportation, set up, and the grinding. Grinding should be considered when making up the facility's operations budget.

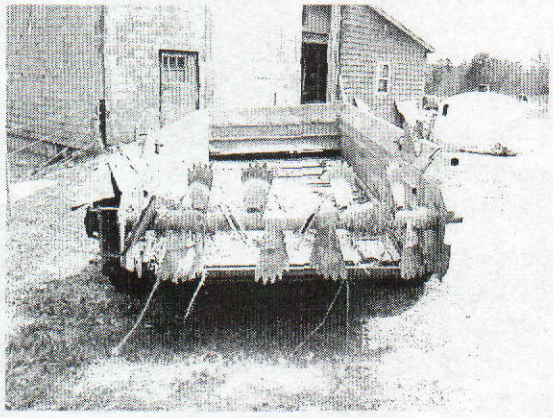
Tub grinder, Glowood Farm, Yarmouth

Once the feedstocks have been properly sized, the next consideration is moisture management. Ideally, a feedstock should contain approximately 50% to 60% water. Adding water to a dry feedstock will help optimize conditions for microbial colonization, whereas adding dry material to a saturated pile helps to create additional air spaces for pile oxygenation. To address this issue, your facility should have a water supply contingency plan, or if possible, have water directly available on site so that feedstocks and compost piles may be irrigated if necessary.

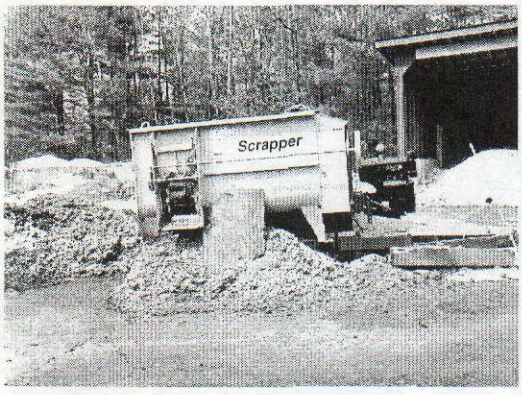
3. MIXING AND PILE FORMATION

a. Mixing. Next to recipe development, proper mixing is the single most important step determining success or failure of the compost operation. Obtaining a thorough, homogeneous mixture at the onset of the compost process, will ensure intimate contact between the carbon, nitrogen and moisture components of the pile, thereby reducing the potential for the formation of "dead spots". In addition, proper mixing allows for even air distribution throughout the pile, helping to promote aerobic composting.

Front End Loader, Boothbay District



Manure Spreader, Lee Farm, Edgecomb



Mixer-Wilton Compost Facility

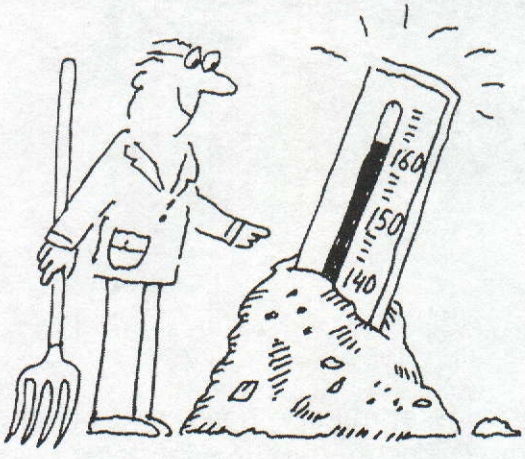
Windrow Turner, Land & Sea Compost, Rockport

Mixing can be accomplished by using: front-end loaders, manure spreaders or other farm equipment, batch or continuous mixers, and windrow turners. Regardless of the method chosen, the objective is to obtain as thorough a mix as possible to help hasten the onset of the active composting phase.

b. Pile Formation. The objective here is to create a pile large enough to sustain the "self-heating" process that accompanies active, thermophilic (requiring high temperature) composting. As a general rule, piles should be constructed at least five to six feet high by eight to 15 feet in diameter. In areas experiencing long winter seasons, pile dimensions may need to be increased to 10 feet high by 15 to 18 feet in diameter. The size and shape of the compost pile will ultimately be determined by the type of compost system that you choose and the volume of material you will be handling in a given season. In addition to adequate mass, the pile must also contain enough porosity (air spaces) to allow natural movement of air throughout the pile. Creating piles that are too high (in excess of 10 feet) risks compression of the inner core contents due to the excessive weight of the overlying materials.

4. TURNING

Turning is the physical process by which compost pile ingredients are blended and re-mixed throughout the active compost phase to help sustain thermophilic temperatures. During the turning process, compacted, settled materials are "fluffed-up", creating air spaces. The act of turning accomplishes several things at once, including: re-mixing of pile ingredients, further physical breakdown of resistant ingredients, and redistribution of air spaces within the pile to help promote passive air flow. In addition, the turning process can be used as a moisture management tool. Piles that are too wet can be turned more often to facilitate drying, whereas piles that are too dry may be turned immediately following precipitation events to help capture and retain moisture. In addition, flattening the top of a pile prior to an anticipated rain event increases the amount of surface area available to absorb moisture.
The frequency of turning depends upon the individual needs of each compost pile.



The easiest way to track the performance of your pile and determine the need for subsequent turnings, is to take and record daily pile temperatures.

To accomplish this, two readings should be taken for each sampling site, one reading at one foot within the pile and the other at

three feet or the pile core itself. These readings should be compared, and compost piles should be turned whenever the difference exceeds 20 degrees. By following this plan, declining temperature trends may be caught and corrected through turning, before pile temperature crashes occur. As a rule of thumb, piles should also be turned whenever there is a significant drop in temperature that cannot be accounted for by an external cause (i.e., 100 year storm event), when active composting temperatures exceed 150 degrees Fahrenheit, or when significant odor production suggests pile imbalances. Piles should not be turned so frequently that the compost process is interrupted and not allowed to reach the optimum temperature.

Wildcat Turner, Windham Corrections Facility

5. CURING

Once the compost mixture has completed the active compost phase, it must undergo a sustained period of curing. Curing is an important, and often forgotten, phase of the compost process. During curing, microorganisms continue the process of organic matter degradation (concentrating on organic acids, large particles, resistant compounds and other particles remaining after the active compost phase), but at a much slower, limited rate. Oxygen consumption, heat generation, carbon dioxide and water vapor evolution are all decreased as the material "matures".

Curing is also essential in readying your product for market. Prolonged curing can make up for compost process shortcomings while also preventing the inadvertent distribution of an immature product. An immature compost product can potentially damage plant root systems due to the presence of volatile organic acids, high C:N ratios, high salt contents, or simply by competing with soil microbes or plant roots for available oxygen reserves.

Once you have a reasonably mature product, you may wish to begin immediate distribution. Some facilities opt to screen the finished compost as a final processing step. Screening improves product quality by removing contaminants and other large, uncomposted particles from the finished product. Screening provides a uniform product that is aesthetically pleasing and therefore, has increased value. The costs involved, including capital investment and extra labor, often deter facility managers from choosing this option. In fact, if you take the time to properly inspect the feedstocks, removing contaminants prior to mixing, the screening step will often not be necessary. Regardless, whether to screen or not is an individual decision dictated by the needs of your community and consumers of the compost product.

VI. TROUBLE SHOOTING THE COMPOST PROCESS

No matter how well you operate your facility you are invariably going to experience problems from time to time. The key to overcoming these problems is to quickly define the "root" cause and treat it. Most compost problems are often interrelated and as a result, addressing one usually solves the others. The most common problems encountered include: failure to reach thermophilic temperatures, uneven composting temperatures throughout the pile, odor and leachate production, and failure to produce a stabilized finished product. Each of these problems may be corrected simply by examining the recipe and thoroughness of the mixing/turning process (Table-1 discusses these problems, their causes, and possible solutions). **The trick to remember is that most compost problems can be avoided simply by optimizing the compost recipe (40-60% moisture, 6.5-7.5 pH, 20:1 to 30:1 C:N, homogeneous mixture, and adequate porosity) at the onset of composting.**

PROBLEM	CAUSE	SOLUTION
Piles fail to heat	Pile too wet or too dry	Adjust moisture to 40-60%
	pH too low or too high	Adjust pH to 6.5-7.5
	Mix is not uniform	Breakdown and re-mix piles; grind ingredients to make compatible
	Particle size is too small	Add "bulking" source to pile to increase porosity
	C:N too high	Adjust C:N to 20:1 - 30:1
	Pile mass too small	Combine piles to increase mass
"Uneven" compost temperatures	Mix is not uniform; particle size mismatch	Breakdown and re-mix piles; grind ingredients to make compatible
Odor Production		
Ammonia	pH too high (>8.5)	Lower pH to 7.5
	Pile too dry	Raise pile moisture to 40%
	Too much nitrogen in recipe	Add carbon source until C:N is between 20:1 and 30:1
"Pungent-Rotting Smell"	pH too low (<5.5)	Raise pH up to 6.5
	Pile too moist	Dry pile down to 60% moisture
	Poor Pile Porosity	Re-mix pile to increase porosity and/or add more bulking agents
Failure to produce a stabilized finished product	Compost pile has not completed active compost phase	Re-mix pile, adjust recipe and allow to continue composting until active phase has been completed
	Inadequate "curing" time	Allow pile to cure for additional time-up to 6 months if necessary

VII. PRODUCT MARKETING AND DISTRIBUTION

A successful marketing strategy begins before the production of any compost. Your marketing strategy should be part of the operations plan developed prior to start up.

A. YOUR STRATEGY:

- should demonstrate your knowledge of the uses and applications of compost,
- briefly describe the operations with a focus on the quality control; and
- detail the plan for getting this information out to potential users.
- You should also consider having the compost tested for its soil amendment value and to ensure the material poses no threat to plants or humans.

Potential users can include municipal public works departments or road crews, public garden and landscape projects, school departments, private general and landscape contractors, and loam production contractors. In the majority of towns, the largest category of end users of composted leaf and yard trimmings will be private homeowners and local landscape contractors.

You will need to consider how loading will be done. Will people be allowed or encouraged to load their own vehicles, or if you have a loader or tractor available, will you provide the service for free or for a fee. Make sure when planning the facility layout that public access to the cured compost does not interfere with other operations at the site.

Finally, let people know when the compost is ready and available! Put up a big sign and put an ad in the local paper. If experience tells us anything, the well made compost will go out as fast as it can be loaded.

Boothbay Regional Refuse Disposal District

B. COMPOSTING IN MAINE

Operating a compost facility in Maine can offer many challenges to the beginning facility manager. Seasonal fluctuations in weather conditions as well as seasonal availability of feedstocks requires preplanning and site preparedness. In the spring, heavy rains can saturate piles, halting compost activity, while rendering access roads impassable. Likewise, sudden winter storms can paralyze a facility by freezing compost piles and halting compost activities.The key is to develop and stick with a successful operating plan that accounts for these weather factors.

C. WINTER COMPOSTING

Maine winters are notorious for being long and cold. Accumulations of snow and ice, coupled with extended periods of subzero temperatures, can spell disaster for outdoor (exposed) facilities if caught unprepared. Excessive snow must be removed and access ways kept open to allow continued facility operations. Cold temperatures slow the

compost process by increasing the amount of heat lost by the compost pile. As this continues, pile microorganisms slow down their metabolic activity, further exaggerating the heat loss, which may result in complete halting of compost activity.

Prior to the onset of colder weather, composting piles may be combined to increase mass (to retain heat) and prevent freeze-ups. As a general rule, finished piles should be at least five feet high by 10 feet wide to assure enough mass to sustain thermophilic temperatures throughout the winter season. Piles (windrows) may also be covered with a commercially available pile cover. The covers, manufactured from a wide variety of materials, help insulate compost piles by preventing heat loss and cold infiltration. In addition, the covers shed water further protecting the pile's surface from freezing. Even if the piles do freeze, it is important to remember that this is only a temporary condition and that the compost process will take off again once the piles thaw.

Spring composting provides additional challenges to facility operators. Periods of heavy rains and slow ground thawing may result in pad rutting and site accessibility issues. This problem can be avoided by designing and constructing an impervious composting surface as well as planning for durable year-round access during the site selection and development phase.

D. SEASONAL AVAILABILITY OF FEEDSTOCKS

Many composting feedstocks are available on a seasonal basis. Leaves, for example, are collected primarily in the fall and to a lesser degree during spring clean up. They must be composted in large quantities. Facilities must develop contingency plans to make allowances for this sudden influx. Seasonal feedstocks will require additional storage as well as adequate space for their immediate processing. Some facilities may wish to compost on a "seasonal basis", operating only when the feedstocks are available. This method works well for small communities who save a portion of space at the local transfer station to handle incoming leaves in the fall.

VIII. SUMMARY

- ✓ SET THE GOALS OF THE COMPOST PROGRAM.
- ✓ PUT SOMEONE IN CHARGE.
- ✓ CREATE A CONTINUING PUBLIC EDUCATION PROGRAM .
- ✓ CREATE THE MARKETING PLAN FOR THE COMPOST BEFORE YOU CREATE THE COMPOST.
- ✓ SELECT A SITE THAT MEETS THE GOALS OF THE PROGRAM, FITS THE RESOURCES OF YOUR COMMUNITY, AND IS COMPATIBLE WITH STATE REGULATIONS.
- ✓ FOLLOW THE GUIDELINES FOR MAKING COMPOST, PAYING ATTENTION TO THE RECIPE, THE MIX, THE FLOW OF THE MATERIALS THROUGH THE VARIOUS STAGES OF THE OPERATION, AND THE SLOPE AND CONDITION OF THE WORKING SURFACE.
- ✓ RECORD THE TEMPERATURE AND ODOR OF THE PILES AND USE THEM AS YOUR GUIDES THROUGH THE PROCESS.
- ✓ BE PREPARED TO MODIFY YOUR OPERATION AS COMPOST CONDITIONS REQUIRE.
- ✓ DISTRIBUTE THE CURED COMPOST.

According to the latest Maine Waste Management and Recycling Plan (June 1998) 140 communities have instituted bans on the disposal of leaves and yard trimmings with their municipal solid waste. Currently, there are 35 centralized municipal leaf and yard waste programs in operation in Maine. We hope this guide will stimulate more towns to consider the composting option.

We encourage programs that have established successful track records in managing leaf and yard trimmings to think about taking their composting programs to the next stage and adding other source separated organics to their mix. Good examples would be certain kinds of food wastes and fish processing wastes. Food discards comprise as much as 25% of the residential waste stream as compared to 13-14% for leaf and yard trimmings. Such a move would require additional regulatory review and monitoring, but would provide an alternative management option at a potentially lower cost than other

Appendix A

TECHNICAL ASSISTANCE :Statewide

The following Maine professionals offer composting technical assistance to individuals wishing to develop compost facilities:

Municipal Technical Assistance.

Sam Morris: Senior Planner
Maine State Planning Office
Waste Management and Recycling Program
38 State House Station, Augusta, ME 04333-0038
Tel. (207) 287-8054
Fax (207) 287-5756
E mail: sam.morris@state.me.us

Mark King: Environmental Specialist,
Maine Department of Environmental Protection
Bureau of Remediation and Waste Management
Solid Waste Division.
17 State House Station, Augusta, ME 04333
Tel. (207) 287-2430
Pager (207) 287-3237
Fax (207) 287-7826
E mail: Mark.a.King@state.me.us

George MacDonald: Program Manager,
Maine State Planning Office
Waste Management and Recycling Program
38 State House Station, Augusta, ME 04333-0038
Tel. (207) 287-5759
Fax (207) 287-5756
E mail: George.MacDonald@state.me.us

Dr. Bill Seekins: Composting and By-product Utilization Specialist,
Maine Department of Agriculture, Food, and Rural Resources
Office of Agricultural, Natural, and Rural Resources
28 State House Station, Augusta, ME 04333
Tel. (207) 287-1132
Fax (207) 287-7548/5576
E mail: Bill.Seekins@state.me.us

Richard Verville: Extension Educator and **Contact for the Maine Compost Team*,**
University of Maine Cooperative Extension
Kennbec County Office
125 State St., 3rd Floor, Augusta, ME 04330-5692
Tel. (207)622-7546
1-800-287-1481 (in Maine)
Fax (207) 621-4919
E mail: dickv@umce.umext.maine.edu

Maine Compost School
University of Maine Cooperative Extension
Waste Management Office
5741 Libby Hall, Room 116, Orono, ME 04469-5741
(207) 581-2722 or 1-800-287-0274 (in Maine)
Fax: (207) 581-1387
E-mail: nhallee@umext.maine.edu

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Remediation & Waste Management
17 State House Station
Augusta, ME 04333-0017
Phone: 207-287-7688 OR 1-800-452-1942
Fax: 287-7826

Solid Waste Facilities Regulation*
Paula M. Clark
Phone: 207-287-2651
E-mail: paula.m.clark@state.me.us

Augusta Region
Jim S. Glasgow
Phone: 207-287-7719
E-mail: jim.s.glasgow@state.me.us

Bangor Region
Cynthia Darling
Phone: 207-941-4570
E-mail: cyndi.w.darling@state.me.us

Portland Region
Randy McMullin
Phone: 207-822-6300
E-mail: randy.l.mcmullin@state.me.us

Presque Isle Region
Lou S. Pizzuti
Phone: 207-764-0477
E-mail: lou.s.pizzuti@state.me.us

Policy & Procedures for Solid Waste Issues
Cliff Eliason
Phone: 207-287-2651
E-mail: clif.g.eliason@state.me.us

Hazardous Waste, Biomedical & Waste Oil Facilities Licensing
Stacy Ladner
Phone: 207-287-2651
E-mail: stacy.a.ladner@state.me.us

Composting
Mark King
Phone: 207-287-2430
E-mail: mark.a.king@state.me.us

TECHNICAL ASSISTANCE: Regional

Androscoggin Region.
Ferg Lea: Senior Planner,
Carol Fuller: Environmental Planner,
Androscoggin Valley Council of Governments
125 Manley Road
Auburn, ME 04210
Tel. (207) 783-9186
Fax (207) 783-5211
E mail:flea@avcog.org
E mail: cfuller@avcog.org

Hancock County.
Thomas Martin: Executive Director,
Jef Fitzgerald: Planner,
Hancock County Planning Commission
395 State Street, Ellsworth, ME 04605
Tel. (207) 667-7131
Fax (207) 667-2099
E mail: tomm@acadia.net
E mail: jef@acadia.net

Kennebec Region.
Sarah Flaks: Environmental Planner,
Kennebec Valley Council of Governments
17 Main St. Fairfield, ME 04937
Tel. (207) 453-4258
Fax (207) 453-4264
E mail: sflaks@kvcog.eddmaine.org

Penobscot, Piscataquis, Knox, Hancock, and Washington Counties.
Greg Lounder: Environmental Planner/ Staff for the Municipal Review Committee,
Eastern Maine Development Corp.
PO Box 2579
Tel. (207) 942-6389
Fax (207)942-3548
E mail: glounder@emdc.org

Aroostook County:
Jay Kamm: Environmental Planner,
Nothern Maine Development Commission
PO Box 779 Caribou, ME 04736
Tel. (207) 498-8736
Fax (207) 493- 3108
E mail: jkamm@nmdc.org

Portland Region:
Tony Dater: Environmental Planner,
Greater Portland Council of Governments
233 Oxford St. Portland, ME 04101
Tel. (207) 774-9891
Fax (207) 774-7149
E mail: tdater@gpcog.eddmaine.org

Southern Maine:
Kate Albert: Environmental Planner,
Southern Maine Regional Planning Commission
PO Box Q, Sandford, ME 04073
Tel. (207) 324-2952
Fax (207) 324-2958
E mail: tork@ime.net

Additional Assistance for Maine's Island Communities:
Susie Valaitis: Community Services Department,
Island Institute
410 Main St., Rockland, ME 04841
Tel. (207) 594-9209
Fax (207) 594-9314
E mail: svalaitis@islandinstitute.org

Appendix B UNIVERSITY OF MAINE COOPERATIVE EXTENSION (UMCE)

Administrative Offices
5741 Libby Hall
Orono, ME 04469-5741
Phone: 207-581-3188 OR 1-800-287-0274 (in Maine)
Fax: 207-581-1387

County Offices

Androscoggin and Sagadahoc Counties
133 Western Ave.
Auburn, ME 04210-4927
Phone: 207-786-0376 OR 1-800-287-1458
Fax: 1-800-924-7508
E-mail: andsag@umext.maine.edu

Aroostook County Offices
13 Hall St.
Fort Kent, ME 04743-1126
Phone: 207-834-3905 OR 1-800-287-1421
Fax: 207-834-3906
E-mail: cesnas@umext.maine.edu

Houlton Road
PO Box 727
Presque Isle, ME 04769-0727
Phone: 207-764-3361 OR 1-800-287-1462
Fax: 207-764-3362
E-mail: cescas@umext.maine.edu

Central Building
PO Box 8
Houlton, ME 04730-0008
Phone: 207-532-6548 OR 1-800-287-1462
Fax: 207-532-6549
E-mail: cessas@umext.maine.edu

Cumberland County
PO Box 9300
15 Chamberlain Ave.
Portland, ME 04104-9300
Phone: 207-780-4205 OR 1-800-287-1471
Fax: 207-780-4382
E-mail: cescmb@umext.maine.edu

Knox and Lincoln Counties
235 Jefferson St.
PO Box 309
Waldoboro, ME 04572-0309
Phone: 207-832-0343 OR 1-800-244-2104
Fax: 207-832-0377
E-mail: ceskl@umext.maine.edu

Oxford County
9 Olson Road
South Paris, ME 04281-6402
Phone: 207-743-6329 OR 1-800-287-1482
Fax: 207-743-0373
E-mail: cesox@umext.maine.edu

Penobscot County
307 Maine Ave.
Bangor, ME 04401-4331
Phone: 207-942-7396 OR 1-800-287-1485
Fax: 207-942-7537
E-mail: cespen@umext.maine.edu

Piscataquis County
59 E. Main St.
Dover-Foxcroft, ME 04426-1396
Phone: 207-564-3301 OR 1-800-287-1491
Fax: 1-800-287-1491
E-mail: cespsq@umext.maine.edu

Somerset County
Norridgewock Ave.
RR1, Box 4734
Skowhegan, ME 04976-9734
Phone: 207-474-9622 OR 1-800-287-1495
Fax: 207-474-0374

Franklin County
145A Main St.
Farmington, ME 04938-1729
Phone: 207-778-4650 OR 1-800-287-1478
Fax: 1-800-287-1478
E-mail: cesfrk@umext.maine.edu

Hancock County
63 Boggy Brook Road
Ellsworth, ME 04605-9540
Phone: 207-667-8212 OR 1-800-287-1479
Fax: 207-667-2003
E-mail: ceshnk@umext.maine.edu

Kennebec County
125 State St., 3rd Floor
Augusta, ME 04330-5692
Phone: 207-622-7546 OR 1-800-287-1481
Fax: 207-621-4919
E-mail: cesken@umext.maine.edu

E-mail: cessom@umext.maine.edu

Waldo County
RR4, Box 4645
Belfast, ME 04915-9627
Phone: 207-342-5971 OR 1-800-287-1426
Fax: 1-800-924-4909
E-mail: ceswal@umext.maine.edu

Washington County
11 Water St.
Machias, ME 04654-1017
Phone: 207-255-3345 OR 1-800-287-1542
Fax: 207-355-6118
E-mail: ceswsh@umext.maine.edu

York County
RR2, Box 1678
Sanford, ME 04073-9502
Phone: 207-324-2814 OR 1-800-287-1535
Fax: 207-324-0817
E-mail: cesyrk@umext.maine.edu

ATS ID	COMPANY NAME	LOCATION	LIC TYPE	ADDRESS	TELEPHONE
15182	ACTON, TOWN OF	ACTON	TYPE IA	BOX 540, ACTON, ME 04001-	(207)636-3839
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
30320	AROOSTOOK RESEARCH FARM MAFES	PRESQUE ISLE	TYPE I	59 HOULTON RD, PRESQUE ISLE, ME 04769-	(207)762-8281
STATUS: Active	DESCRIPTION:	PBR FOR COMPOSTING			
14716	AUGUSTA, CITY OF	AUGUSTA	TYPE IA	16 CONY STREET, AUGUSTA, ME 04330-	(207)626-2365
STATUS: Active	DESCRIPTION:	WINDROW: LEAVES AND FOOD			
14822	BALDWIN, TOWN OF	BALDWIN	TYPE IA	PO BOX 49, WEST BALDWIN, ME 04091-	(207)625-3581
STATUS: Active	DESCRIPTION:	WINDROW: LEAVES			
20410	BANGOR WWTP	BANGOR	TYPE II	760 MAIN ST, BANGOR, ME 04401-	(207)945-4400
STATUS: Inactive	DESCRIPTION:	STATIC AERATED PILE: SEWAGE SLUDGE			
23909	BAR HARBOR WWTP	BAR HARBOR	TYPE II	P O BOX 337, BAR HARBOR, ME 04609-0337	(207)288-4098
STATUS: Active	DESCRIPTION:	STATIC AERATED PILE: SEWAGE SLUDGE AT HULLS COVE COMPOST FACILITY			
15047	BARTLETT FARM SERVICES INC	ELIOT	TYPE I	66 BRIXHAM ROAD, ELIOT, ME 03903-	(207)439-3083
STATUS: Active	DESCRIPTION:	INDOOR WINDROW: BONE GEL, PAPER, YARDWASTE			
24605	BATSON, ELLIOTT	ADDISON	TYPE I	RR #1, BOX 252, ADDISON, ME 04606-	(207)483-4081
STATUS: Inactive	DESCRIPTION:	WINDROW: SEAFOOD AND FISH			
24479	BELGRADE, TOWN OF	BELGRADE	TYPE IA	RR #1 BOX 912, BELGRADE, ME 04917-	(207)495-2258
STATUS: Active	DESCRIPTION:	WINDROW: LEAVES AND VEGETATIVE WASTE			
15617	BLUE RIBBON SEAFOODS INC	LAMOINE	TYPE I	PO BOX 649, ELLSWORTH, ME 04605-	(207)667-2162
STATUS: Active	DESCRIPTION:	WINDROW: SEAFOOD WASTE AND MIXED PAPER			
14128	BOOTHBAY REGION REFUSE DD	BOOTHBAY	TYPE IA	PO BOX 105, BOOTHBAY, ME 04537-	(207)633-5006
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
14843	BRUNSWICK, TOWN OF	BRUNSWICK	TYPE IA	INDUSTRY ROAD, BRUNSWICK, ME 04011-	(207)725-6654
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
15484	BUCKSPORT, TOWN OF	BUCKSPORT	TYPE IA	P.O. DRAWER X, BUCKSPORT, ME 04416-	(207)469-7368
STATUS: Active	DESCRIPTION:	WINDROW: LEAF/YARD WASTE			
15561	CHERRYFIELD FOODS, INC.	CHERRYFIELD	TYPE I	P.O. BOX 128, CHERRYFIELD, ME 04622-	(207)546-7573
STATUS: Active	DESCRIPTION:	WINDROW: FOOD WASTE			
15541	CHICK ORCHARDS	MONMOUTH	TYPE IA	BOX 157, MONMOUTH, ME 04259-0157	(207)933-4452
STATUS: Active	DESCRIPTION:	WINDROW: APPLE POMACE, HEN MANURE, LEAVES, AND WOODASH			
15467	CORRECTIONS, DEPARTMENT OF	WINDHAM	TYPE I	P O BOX 260, WINDHAM, ME 04062-0260	(207)892-6716
STATUS: Active	DESCRIPTION:	WINDROW: FOOD WASTES			
15125	COZY HARBOR SEAFOOD, INC.	HOLLIS	TYPE I	P.O. BOX 389 DTS, PORTLAND, ME 04112-	(207)799-6595
STATUS: Active	DESCRIPTION:	WINDROW: COOKED SHRIMP SHELLS			
24006	CROSSROAD FARM	JONESPORT	TYPE I	RFD BOX 3230, JONESPORT, ME 04649-	(207)497-2641
STATUS: Active	DESCRIPTION:	WINDROW: FISH PROCESSING WASTE			
14869	DECOSTER EGG FARMS	TURNER	TYPE I	P.O. BOX 219-220, TURNER, ME 04282-	(207)224-8222
STATUS: Inactive	DESCRIPTION:	WINDROW: EGG WASTE			
30888	DENNIS KING	PENOBSCOT	TYPE I	RR 1 BOX 731, PENOBSCOT, ME 04476-	(207)326-9701
STATUS: Active	DESCRIPTION:	PBR FOR COMPOSTING TYPE I & IA MATERIAL WINDROW METHOD			

COMPOST SITES

ATS ID	COMPANY NAME	LOCATION	LIC TYPE	ADDRESS	TELEPHONE
24021	DOUG GOTT AND SONS INC	TREMONT	TYPE I	HCR 33 BOX 320, SOUTHWEST HARBOR, ME 04679-	(207)244-7461
STATUS: Active	DESCRIPTION:	WINDROW: CRAB PROCESSING WASTE AND SAWDUST			
24022	ELIOT, TOWN OF	ELIOT	TYPE I	141 STATE ROAD, ELIOT, ME 03903-	(207)439-9451
STATUS: Active	DESCRIPTION:	WINDROW: LEAVE, GRASS AND GARDEN WASTES			
24393	EMR INC	SOUTHWEST HARBOR	TYPE I	PO BOX 787, SOUTHWEST HARBOR, ME 04679-078	(207)244-9033
STATUS: Active	DESCRIPTION:	WINDROWS: CRAB WASTE			
28248	FITZPATRICK, DONALD	HOULTON	TYPE I	RFD 1 BOX 332, HOULTON, ME 04730-	(207)532-7508
STATUS: Active	DESCRIPTION:	PBR COMPOST SITE TYPE 1 CULLED POTATOES			
15056	FORT FAIRFIELD, TOWN OF	FORT FAIRFIELD	TYPE II	PO BOX 350, FORT FAIRFIELD, ME 04742-	(207)472-3800
STATUS: Active	DESCRIPTION:	WINDROW: CULL POTATOES, SLUDGE, AND FOOD WASTE			
14743	GAMMON LANDSCAPE NURSERY INC	AUBURN	TYPE IA	RFD 3, BOX 811 RT 4, AUBURN, ME 04210-	(207)783-6986
STATUS: Inactive	DESCRIPTION:	WINDROW: VEGETATIVE WASTES			
20418	GARDINER WWTP	GARDINER	TYPE II	6 CHURCH STREET, GARDINER, ME 04345-	(207)582-1351
STATUS: Inactive	DESCRIPTION:	STATIC AERATED COMPOST PILE			
14904	GLOWOOD FARM	YARMOUTH	TYPE I	670 NORTH RD, YARMOUTH, ME 04096-	(207)846-5041
STATUS: Active	DESCRIPTION:	WINDROW: SEAFOOD WASTE AND PRODUCE WASTE			
27702	GUPTILL & HUNTLEY	WHITING	TYPE I	PO BOX 226, EAST MACHIAS, ME 04630-	(207)255-4130
STATUS: Active	DESCRIPTION:	WINDROW: FISH WASTE			
15075	H SMITH PACKING CORPORATION	WESTFIELD	TYPE I	PO BOX 189, BLAINE, ME 04734-	(207)425-3421
STATUS: Active	DESCRIPTION:	WINDROW: CULL POTATOES/SAWDUST/COVER MATERIAL/ASH			
29776	HALFORD, JOYCE	HARTLAND	TYPE IA	RFD 1 BOX 1890, HARTLAND, ME 04943-	(207)938-2336
STATUS: Active	DESCRIPTION:	TYPE 1A COMPOSTING FACILITY-OPEN WINDROW			
14363	HAWK RIDGE COMPOST FACILITY	UNITY TWP	TYPE II	RFD 1 BOX 1682, UNITY, ME 04988-1682	(207)846-3737
STATUS: Active	DESCRIPTION:	INVESSEL COMPOST FACILITY: SEWAGE SLUDGE			
14864	HILLSIDE FARM	CAMDEN	TYPE IA	P.O. BOX 399, CAMDEN, ME 04843-	
STATUS: Active	DESCRIPTION:	WINDROW: LEAF & VEGETATIVE WASTE			
23537	HOLM, KENNETH	WHITEFIELD	TYPE I	RR 1 BOX 121, WHITEFIELD, ME 04353-	(207)549-3263
STATUS: Active	DESCRIPTION:	WINDROW: LEAF/YARD WASTES			
26786	HOULTON, TOWN OF	HOULTON	TYPE I	21 WATER ST, HOULTON, ME 04730-	(207)532-1325
STATUS: Active	DESCRIPTION:	WINDROW LEAF AND YARD AND CULL POTATOES			
15293	INTERSTATE SEPTIC SYSTEMS INC	ROCKLAND	TYPE II	10 GORDON DR, ROCKLAND, ME 04841-	(207)354-6310
STATUS: Active	DESCRIPTION:	AGITATED BIN: SEPTAGE, FOOD, FISH			
24618	J & L COMPOST	WASHINGTON	TYPE I	224 CRYSTAL LAKE ROAD, WASHINGTON, ME 04574-	(207)845-2391
STATUS: Active	DESCRIPTION:	WINDROW: FISH AND SEAFOOD PROCESSING WASTE			
15239	JAY, TOWN OF	JAY	TYPE IA	99 MAIN STREET, JAY, ME 04239-	(207)897-6785
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
20412	KENNEBUNKPORT WWTP	KENNEBUNKPORT	TYPE II	PO BOX 566, KENNEBUNKPORT, ME 04046-0566	(207)967-4243
STATUS: Active	DESCRIPTION:	STATIC AERATED PILE: SEWAGE SLUDGE & ASH			
27723	KINGFIELD, TOWN OF	KINGFIELD	TYPE IA	RR 1 BOX 1585, KINGFIELD, ME 04947-	(207)265-4637
STATUS: Active	DESCRIPTION:	COMPOST LEAVES, GRASS, GARDEN WASTE: STATIC PILE			

ATS ID	COMPANY NAME	LOCATION	LIC TYPE	ADDRESS	TELEPHONE
23369	KITTERY, TOWN OF	KITTERY	TYPE IA	PO BOX 808, KITTERY, ME 03904-0808	(207)439-4646
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
26505	KNOX RIDGE HOLSTEIN FARM	THORNDIKE	TYPE I	RR 2, BOX 740, THORNDIKE, ME 04986-	(207)568-3683
STATUS: Active	DESCRIPTION:	WINDROW: FOOD WASTE			
26365	LAMONT, WALTER	MONTVILLE	TYPE I	RR #1, BOX 2265, FREEDOM, ME 04941-	(207)342-4042
STATUS: Active	DESCRIPTION:	WINDROW: SEA URCHIN PROCESSING WASTE			
29059	LAND & SEA COMPOST	ROCKPORT	TYPE IA	62 MEADOW ST, ROCKPORT, ME 04856-	(207)236-4147
STATUS: Active	DESCRIPTION:	WINDROW FACILITY/LEAF, YARD WASTE, FISH & MANURE			
15150	LEWISTON-AUBURN W.P.C.A.	AUBURN	TYPE II	535 LINCOLN ST, LEWISTON, ME 04240-	(207)782-0917
STATUS: Active	DESCRIPTION:	AGITATED BIN: SEWAGE SLUDGE			
15129	LINCOLN COUNTY SW MGT OFFICE	NOBLEBORO	TYPE IA	PO BOX 249, WISCASSET, ME 04578-	
STATUS: Active	DESCRIPTION:	WINDROW: LEAF & YARD WASTE AND ANIMAL MANURE			
14438	LINCOLN SANITARY DISTRICT	LINCOLN	TYPE II	PO BOX 56, LINCOLN, ME 04457-	(207)794-8244
STATUS: Active	DESCRIPTION:	AERATED STATIC PILE: SEWAGE SLUDGE			
28670	LITTLE RIVER TURF FARM	LISBON	TYPE II	EDGECOMB RD, LISBON FALLS, ME 04252-	(207)353-2810
STATUS: Active	DESCRIPTION:	STATIC AERATED FACILITY: SEWAGE SLUDGE & AMENDMENTS			
28149	LITTLETON, TOWN OF	MONTICELLO	TYPE I	RR 1 BOX 70, MONTICELLO, ME 04760-	(207)538-9862
STATUS: Active	DESCRIPTION:	WINDROW: LEAF & YARD, POTATOES			
13379	MACHIAS WWTP	MACHIAS	TYPE II	LOWER MAIN STREET, MACHIAS, ME 04654-	(207)255-3295
STATUS: Inactive	DESCRIPTION:	WINDROW: SEWAGE SLUDGE			
15287	MAINE WILD BLUEBERRY COMPANY	MACHIAS	TYPE I	P O BOX 128, CHERRYFIELD, ME 04622-0128	(207)255-8364
STATUS: Active	DESCRIPTION:	WINDROW: BLUBERRY WASTE AND FISH WASTE			
15601	MAINE-LY POULTRY	WARREN	TYPE I	PO BOX 5, WARREN, ME 04864-	(207)273-4029
STATUS: Active	DESCRIPTION:	BELTSVILLE METHOD: TURKEY OFFAL			
14408	MEARL CORPORATION	PERRY	TYPE I	BROAD COVE, EASTPORT, ME 04631-	(207)853-2501
STATUS: Inactive	DESCRIPTION:	WINDROW: FISH SCALES			
27246	*MID MAINE SOLID WASTE ASSOC*	CORINNA	TYPE IA	PO BOX 68, DEXTER, ME 04930-	(207)924-3650
STATUS: Active	DESCRIPTION:	WINDROW: LEAF & YARDWASTE			
15461	MILLINOCKET, TOWN OF	MILLINOCKET	TYPE IA	197 PENOBSCOT AVENUE, MILLINOCKET, ME 04462-	(207)723-9701
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
24099	MOORE, DAVID	SWANVILLE	TYPE II	RFD 2 BOX 276, BELFAST, ME 04915-	(207)338-4586
STATUS: Inactive	DESCRIPTION:	ROOFED WINDROW: SEPTAGE WITH WOODCHIPS			
30325	NEWCOMB, GREGORY S	PERRY	TYPE I	BOX 148 SOUTH MEADOW RD, PERRY, ME 04667-	(207)853-4851
STATUS: Active	DESCRIPTION:	PBR WINDROW COMPOSTING:FISH SCALES			
27895	NEWPORT, TOWN OF	NEWPORT	TYPE I	31 WATER ST, NEWPORT, ME 04953-	(207)368-5575
STATUS: Active	DESCRIPTION:	TYPE 1A COMPOST FACILITY			
14404	NORTH ATLANTIC PRODUCTS INC	THOMASTON	TYPE I	PO BOX 146, ROCKLAND, ME 04841-	(207)596-0331
STATUS: Surrendered	DESCRIPTION:	WINDROW: FISH SCALES AND PROCESSING WASTE-N. ATLANTIC PRODUCT			
25925	NORTHERN KATAHDIN VALLEY WASTE	DYER BROOK	TYPE IA	RR #1, BOX 56, ISLAND FALLS, ME 04747-	(207)757-8700
STATUS: Active	DESCRIPTION:	TURNED PILE: YARD AND LEAF WASTE			

COMPOST SITES

ATS ID	COMPANY NAME	LOCATION	LIC TYPE	ADDRESS	TELEPHONE
25837	OAKLAND, TOWN OF	OAKLAND	TYPE IA	P.O. BOX 187, OAKLAND, ME 04963-	(207)465-7357
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
13562	OLD ORCHARD BEACH, TOWN OF	OLD ORCHARD BEACH	TYPE II	P O BOX O, OLD ORCHARD BEACH, ME 04064-	(207)934-5714
STATUS: Active	DESCRIPTION:	STATIC AERATED PILE: SEWAGE SLUDGE RENEWAL			
24420	OLD TOWN WWTP	OLD TOWN	TYPE II	51 NORTH BRUNSWICK ST, OLD TOWN, ME 04468-1497	(207)827-3961
STATUS: Active	DESCRIPTION:	STATIC AERATED PILE: SEWAGE SLUDGE			
28678	OLD TOWN, CITY OF	PENOBSCOT	TYPE IA	51 NORTH BRUNSWICK ST, OLD TOWN, ME 04468-	(207)827-3974
STATUS: Active	DESCRIPTION:	LEAF & YARD WASTE COMPOST- WINDROW METHOD			
15596	PENOBSCOT FROZEN FOODS, INC.	WASHBURN	TYPE I	P.O. BOX 229, BELFAST, ME 04915-	(207)338-4360
STATUS: Active	DESCRIPTION:	WINDROW: FOOD WASTE			
15445	PLEASANT RIDGE LANDSCAPE NURSERY	TURNER	TYPE IA	R.R. 2, BOX 1312, TURNER, ME 04282-	(207)897-4062
STATUS: Never Built	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
14230	PORTLAND WATER DISTRICT	WESTBROOK	TYPE II	P.O. BOX 3553, PORTLAND, ME 04104-	(207)761-8300
STATUS: Inactive	DESCRIPTION:	WINDROW: SEWAGE SLUDGE			
24130	PRESQUE ISLE, CITY OF	PRESQUE ISLE	TYPE I	12 2ND ST, PRESQUE ISLE, ME 04769-2459	(207)764-4485
STATUS: Active	DESCRIPTION:	WINDROW: FOOD WASTE			
14500	REGIONAL WASTE SYSTEMS	SOUTH PORTLAND	TYPE IA	64 BLUEBERRY ROAD, PORTLAND, ME 04102-	(207)773-6465
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
24159	RICKER FARM	LISBON	TYPE IA	60 RIDGE STREET, LISBON, ME 04250-	(207)353-4513
STATUS: Active	DESCRIPTION:	WINDROW: LEAVES, VEGETATIVE, AND FOOD WASTE			
15036	RID INC	WEST BATH	TYPE IA	PO BOX 221, BATH, ME 04530-	(207)443-3217
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND VEGETATIVE WASTE			
14698	ROBINSON MANUFACTURING COMPANY	OXFORD	TYPE II	PO BOX 195, OXFORD, ME 04270-	(207)539-4481
STATUS: Active	DESCRIPTION:	WINDROW: WOOL (TEXTILE) SLUDGE			
13547	RUMFORD-MEXICO SEWERAGE DIST	MEXICO	TYPE II	P.O. BOX 160, RUMFORD, ME 04276-	(207)364-7225
STATUS: Active	DESCRIPTION:	STATIC AERATED PILE: SEWAGE SLUDGE			
24897	RUSSELL, STEVEN C & ETHELYN B	WINSLOW	TYPE IA	RFD #2, BOX 5890, WINSLOW, ME 04901-	(207)872-5758
STATUS: Active	DESCRIPTION:	WINDROW: LEAVES AND HEN MANURE			
14796	SACO PUBLIC WORKS DEPARTMENT	SACO	TYPE IA	300 MAIN STREET, SACO, ME 04072-1583	(207)282-8209
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
13522	SCARBOROUGH SANITARY DISTRICT	SCARBOROUGH	TYPE II	415 BLACK POINT ROAD, SCARBOROUGH, ME 04074-	(207)883-4663
STATUS: Active	DESCRIPTION:	STATIC AERATED PILE: SEWAGE SLUDGE			
31218	SCOVILLE, TIMOTHY R	LUBEC	TYPE I	RD 2 BOX 1135, LUBEC, ME 04652-	(207)733-2351
STATUS: Active	DESCRIPTION:	OPEN WINDROW COMPOSTING: FISH WASTE			
30118	SKOWHEGAN, TOWN OF	SKOWHEGAN	TYPE IA	90 WATER ST, SKOWHEGAN, ME 04976-	(207)474-6911
STATUS: Active	DESCRIPTION:	TYPE 1A LEAF COMPOSTING			
26016	SOIL PREPARATION INC	PLYMOUTH	TYPE II	P O BOX 158, PLYMOUTH, ME 04969-0158	(207)848-5405
STATUS: Active	DESCRIPTION:	AGITATED BIN: SEPTAGE, SLUDGE, FOOD WASTE			
24250	SOUTH BERWICK, TOWN OF	SOUTH BERWICK	TYPE IA	180 MAIN STREET, SOUTH BERWICK, ME 03908-0236	(207)384-2263
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			

COMP... SITES

ATS ID	COMPANY NAME	LOCATION	LIC TYPE	ADDRESS	TELEPHONE
20294	SOUTH PORTLAND, CITY OF	SOUTH PORTLAND	TYPE II	25 COTTAGE ROAD, SOUTH PORTLAND, ME 04106-	(207)767-7675
STATUS: Inactive	DESCRIPTION:	STATIC AERATED PILE: SLUDGE			
29629	ST ONGE, ROBERT L	LYMAN	TYPE I	100 NOT A ROAD, LYMAN, ME 04002-	(207)499-7886
STATUS: Active	DESCRIPTION:	COMPOSTING OF ORGANIC/VEGATIVE MATTER			
20416	STINSON CANNING COMPANY	GOULDSBORO	TYPE I	ROUTE 186, PROSPECT HARBOR, ME 04669-	(207)963-7331
STATUS: Inactive	DESCRIPTION:	WINDROW: FISH WASTE AND SAWDUST			
15270	STONINGTON, TOWN OF	STONINGTON	TYPE IA	PO BOX 9, STONINGTON, ME 04681-	(207)367-2351
STATUS: Active	DESCRIPTION:	WINDROW: YARD WASTE			
15338	TRUE FARMS, INC.	CHARLESTON	TYPE I	RR 1, BOX 4710, CHARLESTON, ME 04422-	(207)285-3604
STATUS: Inactive	DESCRIPTION:	WINDROW: FOOD AND YARD WASTE			
29712	UNIVERSITY OF MAINE	OLD TOWN	TYPE I	107 MAINE AVE, BANGOR, ME 04401-	(207)973-3336
STATUS: Active	DESCRIPTION:	WINDROW: LEAF & YARD WASTE, CAFETERIA FOOD, MANURE			
14986	UNIVERSITY OF MAINE - ORONO	BANGOR	TYPE I	107 MAINE AVENUE, BANGOR, ME 04401-4380	(207)947-0336
STATUS: Active	DESCRIPTION:	WINDROW AND IN-VESSEL: LEAVES AND VEGETATIVE WASTE			
15199	VEAZIE, TOWN OF	VEAZIE	TYPE IA	1084 MAIN STREET, VEAZIE, ME 04401-	(207)947-2781
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
15599	WASHINGTON COUNTY COMMISSIONER	MARION TWP	TYPE I	P.O. BOX 297, MACHIAS, ME 04654-	(207)255-8919
STATUS: Active	DESCRIPTION:	WINDROW: FISH PROCESSING WASTE (SALMON MORTS)			
15164	WATERBORO, TOWN OF	WATERBORO	TYPE IA	PO BOX 130, WATERBORO, ME 04087-	(207)247-5166
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
14573	WATERVILLE, CITY OF	WATERVILLE	TYPE IA	CITY HALL, 1 COMMON STREET, WATERVILLE, ME 04901-	(207)873-7131
STATUS: Inactive	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
14856	WATERVILLE/WINSLOW, CITIES OF	WINSLOW	TYPE IA	6 WENTWORTH COURT, WATERVILLE, ME 04901-	(207)873-7131
STATUS: Inactive	DESCRIPTION:	WINDROW: LEAFE AND VEGETATIVE WASTE			
26674	WEBB, RONALD	PITTSTON	TYPE I	RR 2 BOX 73, GARDINER, ME 04345-	(207)582-5595
STATUS: Active	DESCRIPTION:	WINDROW: MUSSEL WASTE UP TO 2,000 YD/YR			
15485	WHITE BUFFALO FOREST	GOULDSBORO	TYPE I	BOX 42, SOUTH GOULDSBORO, ME 04678-	(207)963-7326
STATUS: Active	DESCRIPTION:	WINDROW: FISH PROCESSING WASTE (SEA URCHINS,SEA CUCUMBERS)			
15422	WILTON WWTP	WILTON	TYPE II	PO BOX 541, WILTON, ME 04294-0541	(207)645-3682
STATUS: Active	DESCRIPTION:	STATIC AERATED PILE: SEWAGE SLUDGE			
24403	WINSLOW, ADDIE	MAPLETON	TYPE IA	254 CREASEY RIDGE ROAD, MAPLETON, ME 04757-	(207)764-1729
STATUS: Active	DESCRIPTION:	WINDROW: LEAF AND YARD WASTE			
15279	WOODWARD, CARL	STONINGTON	TYPE I	RFD #1, BOX 2778, STONINGTON, ME 04681-	(207)367-2605
STATUS: Active	DESCRIPTION:	WINDROW: CRAB WASTES			
29497	WORCESTER ENERGY CO	DEBLOIS	TYPE I	PO BOX 263, CHERRYFIELD, ME 04622-	(207)638-2811
STATUS: Active	DESCRIPTION:	GENERAL TYPE I COMPOST LICENSE-OPEN WINDROW			
13517	YARMOUTH WWTP	YARMOUTH	TYPE II	P.O. BOX 455, YARMOUTH, ME 04096-	(207)846-2415
STATUS: Active	DESCRIPTION:	COMPOST SITE RENEWAL			
15271	YARMOUTH, TOWN OF	YARMOUTH	TYPE IA	P.O. BOX 907, YARMOUTH, ME 04096-	(207)846-4971
STATUS: Active	DESCRIPTION:	WINDROW: YARD WASTE			

Appendix D

Publications

Composting for Municipalities, Planning and Design Considerations
Editor: Mark Dougherty. Natural Resource, Agriculture and Engineering Service, 152 Riley - Robb Hall, Cooperative Extension, Ithaca, NY. 14853-5701. 1998, 126 pages (NRAES publication #94)

The Art and Science of Composting
Editied by the Staff of Biocycle. JG Press, Emmaus, Pennsylvania. 1991. 270 pages.

Yard Waste Composting
Editied by the staff of Biocycle. JG Press, Emmaus, Pennsylvania, 1989. 197 pages.

On Farm Composting Handbook
Editor: Robert Rink. Natural Resource, Agriculture, and Engineering Service, 152 Riley - Robb Hall, Cooperative Extension, Ithaca, NY 14853-5701 1992. 186 pages. (NRAES publication #54)

Municipal Leaf and Yard Waste Composting
Coordinated by Nancy E. Adams. University of New Hampshire Cooperative Extension, PO Box 200 Epping, NH 03042. 1993. 44 pages. *Heavily Appended, includes glossary.*

Keep It Off the Curb
Harmonious Technologies. PO Box 1865, Ojai, CA 93024. 1994. 218 pages. *A manual for managing a home compost program.*

Field Guide to On-Farm Composting
Editor: Mark Dougherty. Natural Resource, Agriculture, and Engineering Service, Cooperative Extension 152 Riley-Robb Hall, Ithaca, New York 14853-5701 1999. 118 pages. (NRAES publication #114)
Field Guide format, plastic coated pages.

Appendix E

Useful Web Site Links

The University of Maine Cooperative Extension Compost School *www.composting.org*

Cornell Composting: *www.cals.cornell.edu/dept/compost*

The U.S. Composting Council *www.compostingcouncil.org*

The Composting Council of Canada *www.compost.org*

Composting: EPA *www.epa.gov/epaoswer/non-hw/compost/index.h™*

Food Waste Reduction:*www.epa.gov/epaoswer/non-hw/reduce/food/food.h™*

Waste Management and Recycling Program, Maine State Planning Office *www.state.me.us/spo/wm&r/wmhome.h™*

California Integrated Waste Management Board *www.ciwmb.ca.gov/organics*

The Compost Resource Page *www.oldgrowth.org/compost/*

The University of Maine Cooperative Extension including all county field offices www.umce.?

FINISHED COMPOST
READY FOR DISTRIBUTION

CURING COMPOST

CURING COMPOST

STOP

RECEIVING AREA
SORT TO TYPE
INSPECT FOR QUALITY

CLEAN MATERIALS
ONTO FEEDSTOCK PILE
GRASS, YARD CLIPPINGS,
"GREEN" NITROGEN FEEDSTOCKS
MIXED DIRECTLY
INTO PILES

ALL PILES RUN
WITH SLOPE

CONTAMINANTS
REJECTED LOADS OUT

ACTIVE COMPOST

ACTIVE COMPOST

LEAVES, "BROWN" CARBON FEEDSTOCKS.
STORAGE

ACTIVE COMPOST

Appendix H